AV85 HYGRO-ANEMOMETER

Instruction Manual

MARTINDALE ELECTRIC

⚠ ALWAYS READ THESE INSTRUCTIONS BEFORE PROCEEDING

Thank you for buying one of our products. For safety and a full understanding of its benefits please read this manual before use. Technical support is available from 01923 441717 and support@martindale-electric.co.uk.

CONTENTS

1	**Safety Information**	**1**
1.1	Meaning of Symbols and Markings	1
1.2	Precautions	2
2	**Introduction**	**3**
2.1	Inspection	3
2.2	Description	3
2.3	Accessories	3
2.4	Battery Installation	3
3	**Operation**	**4**
3.1	Low Battery Indication	4
3.2	Description of Press Buttons	4
3.3	Description of LCD Symbols	4
3.4	Power On/Off	5
3.5	Auto Power Off	5
3.6	Backlight	5
3.7	Set Mode	6
3.8	Measurement Mode	7
3.9	Max/Min Mode	7
4	**Maintenance**	**9**
4.1	Battery Replacement	9
4.2	Calibration	9
4.3	Cleaning	10
4.4	Repair & Service	10
4.5	Storage Conditions	10
5.	**Warranty**	**11**
	Specifications	

1 SAFETY INFORMATION

⚠ REMEMBER: SAFETY IS NO ACCIDENT

These instructions contain both information and cautions that are necessary for the correct operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood.

Particular attention should be paid to the Precautions and Technical Specifications.

Please keep these instructions for future reference. Updated instructions and product information are available at: www.martindale-electric.co.uk

1.1 Meaning of Symbols and Markings

⚠ **Caution - refer to instructions**

CE **Equipment complies with relevant EU Directives**

End of life disposal of this equipment should be in accordance with relevant EU Directives.

1.2 Precautions

Please pay attention to the following cautions before use.

⚠ Cautions

The AV85 must only be used under the conditions and for the purposes for which it has been constructed and specified.

Before use check the unit for cracks or any other damage. Make sure the unit is free from dust, grease and moisture. **Do not** use if damaged.

Avoid severe mechanical shock or vibration and extreme temperature.

To avoid possible corrosion from leaking batteries, remove the batteries if discharged, or when the unit is not in use for an extended period.

2. INTRODUCTION

2.1 Inspection
Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

2.2 Description
The Martindale AV85 has the following measurement functions:

- Wind velocity from 0.4 to 20 m/s (80 to 4000 ft/m)
- Relative humidity from 0% to 100% R.H.
- Air, dew point, wet bulb and wind chill temperature from -20°C to 60°C (-4°F to 140°F)

Further functions and features are:

- Hold, Max, Min, Max-Min and Average functions
- Auto power off
- Low battery indication
- LCD display with backlight
- Pocket-sized, compact body

2.3 Accessories
The AV85 comes with the following accessories:

- Protective cover for safe storage
- 2 x 1.5V AAA batteries
- Detachable carry strap
- Instructions

2.4 Battery Installation
Refer to Section 4.1 (Battery Replacement) for the battery installation instructions for the AV85.

3. OPERATION

3.1 Low Battery Indication
If the symbol is displayed, the battery needs replacing as measurement accuracy can no longer be guaranteed (see section 4.1 Battery Replacement).

3.2 Description of Press Buttons

▲	Selects Set mode settings Selects between alternative measurements
⏻	Turns on/off the AV85, turns on backlight
MODE	Selects Set mode and Max/Min mode functions

3.3 Description of LCD symbols

Beau ft/min mph km/h Kts m/s	Unit of wind velocity measurement being displayed
°C °F	Selected temperature scale
WCT	Wind chill temperature is displayed
HOLD	Hold mode is active
MAX	Maximum reading is displayed
MIN	Minimum reading is displayed
MAX-MIN	The difference between maximum and minimum readings is displayed

AVG	The average reading is displayed
WB	Indicates wet bulb temperature is being displayed
td	Indicates dew point temperature is being displayed
▲	Indicates press of ▲ button required
APO	Auto power off is activated
	Indicates low batteries
ENTER	Indicates press of MODE button required

3.4 Power On/Off
To power on in Measurement mode, press ⏻ for less than 1 second.

To power on in Set mode, press ⏻ for 2 seconds.

To power off the unit, press ⏻ for 2 seconds.

3.5 Auto Power Off (APO)
If the unit is inactive for a period of 10 minutes it will automatically power off.

To disable this function refer to section 3.7.

3.6 Backlight
Press ⏻ for less than 1 second to turn on the backlight.

It will automatically turn off after 15 seconds if there is no further operation of the unit.

3.7 Set Mode
This mode sets the following in the order shown:

- Unit of wind velocity measurement;
- Temperature scale;
- Humidity, dew point temperature or wet bulb temperature measurement;
- Auto power off (APO).

The Set mode is selected by pressing ⏻ button for 2 seconds with the unit powered off.

If the AV85 is switched off while in the Set mode, any changed settings will not be saved, and the unit will revert to the previous settings.

Unit of Wind Velocity Measurement
The LCD will flash the currently set unit of wind velocity measurement after entering the Set mode.
Press ▲ to select **Beau, m/s, km/h, ft/min, mph** or **Kts**.
Press MODE to advance to the next function.

Temperature Scale
The LCD will flash the currently set temperature scale.
Press ▲ to select °**C** or °**F**.
Press MODE to advance to the next function.

RH (%), Dew Point (td), Wet Bulb (WB) Measurement
The LCD will flash the currently set measurement.
Press ▲ to select **%**, **td** or **WB**.
Press MODE to advance to the next function.

APO
The LCD will display **APO**.
Press ▲ to select **ON** or **OFF** as required.
Press MODE to save settings and return to the Measurement mode.

3.8 Measurement Mode
The AV85 should be held with the rear of the meter facing the airflow so the user can view the display while taking measurements.

Press ▲ for < 1 second to scroll through the following measurements on the upper display:
- **wind velocity**;
- **relative humidity** or **dew point** temperature or **wet bulb** temperature as selected in section 3.7 - the LCD will display % or **td** or **WB** respectively;
- **wind chill** temperature - the LCD will display **WCT**.

The lower display indicates the measured **Air temperature**.

3.9 Max/Min Mode
The AV85 has the facility to display the maximum reading, the minimum reading, the difference between maximum and minimum readings and the average reading.

To enter the Max/Min mode press MODE while in Measurement mode.

The LCD will display **HOLD** and the last measured value will be held on the display.

Successive presses of the MODE button will display the following in sequence:
- **MAX** - maximum reading;
- **MIN** - minimum reading;
- **MAX-MIN** - difference between max and min readings;
- **AVG** - average reading.

The unit will return to the Measurement mode at the end of the above sequence.

To c**lear the recorded readings**, press MODE for 2 seconds at any point in the above sequence. The unit will return to the Measurement mode.

4. MAINTENANCE

4.1 Battery Replacement
Push the battery cover up towards the vanes and lift away from the back of the AV85.

Remove the old batteries from the battery compartment.

Replace with 2 x new AAA batteries (IEC LR03, NEDA 24A), observing correct polarity as indicated on the base of the battery compartment.

Replace the battery cover.

Note:- Do not mix old and new batteries.

4.2 Calibration
To maintain the integrity of measurements made using your instrument, Martindale Electric recommends that it is returned at least once a year to an approved Calibration Laboratory for recalibration and certification.

Martindale Electric is pleased to offer you this service. Please contact our Service Department for details.
Email: service@martindale-electric.co.uk
Tel: 01923 650660

4.3 Cleaning
If contamination is found, clean with a damp soft cloth and if necessary a mild detergent. Do not use abrasives, abrasive solvents, or detergents which can cause damage to the unit. If a mild detergent is used, the unit should subsequently be thoroughly cleaned with a water dampened soft cloth. After cleaning, dry and allow to remain in a dry environment for 2 hours before use.

4.4 Repair & Service
There are no user serviceable parts in this unit other than those that may be described in section 4. Return to Martindale Electric if faulty. Our service department will provide a quotation to repair any fault that occurs outside the guarantee period.

Before the unit is returned, please ensure that you have checked the unit and batteries.

4.5 Storage Conditions
The instrument should be kept in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve the working life of the unit. It is strongly advised that the unit is not kept in a tool box where other tools may damage it.

5. WARRANTY AND LIMITATION OF LIABILITY

This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer, and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's reasonable opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage.

Martindale authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to Martindale within the warranty period.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.

Specification
AV85
Hygro-Anemometer

All specified accuracies are at 23°C ± 5°C, <70% R.H. for 1 year.
Temperature coefficient: 0.1 x (specified accuracy) per °C, (-20°C to 18°C, 28°C to 60°C).

AIR FLOW

Range	Resolution	Accuracy
0.4 to 20 m/s	0.1 m/s	± (0.2 m/s + 2% of reading)
80 to 4000 ft/min	1 ft/min	± (40 ft/m + 2% of reading)

AIR TEMPERATURE

Range	Resolution	Accuracy
-20°C to 60°C	0.1°C	± 0.5°C (0°C to 45°C) ± 1°C (-20°C to 0°C, 45°C to 60°C)
-4°F to 140°F	0.1°F	± 1°F (32°F to 113°F) ± 2°F (-4°F to 32°F, 113°F to 140°F)

RELATIVE HUMIDITY

Range	Resolution	Accuracy
0 to 100% R.H.	0.1% R.H.	± 2.5% (10% to 90% R.H.) ± 5% (0% to 10%, 90% to 100% R.H.)

Specification
AV85
Hygro-Anemometer

Sensor: digital capacitive humidity sensor
Sensor response time for 90% of total range: 60 seconds typical
Sensor hysteresis (excursion of 10% to 90% to 10% R.H.): ±1% R.H. typical

GENERAL

Display: liquid crystal display
Measurement rate: once per second
Power: 2 x 1.5V, AAA alkaline batteries (IEC LR03, NEDA 24A)
Continuous operating time: 50 hours typical
Auto power off: after approx. 10 minutes
Low battery indication: The " ▭ " is displayed when the battery voltage drops below the operating level
Dimensions: 132.9(L) x 50.9(W) x 24.7(D) mm
Weight: Approx. 119g including batteries
Includes: protective cover, 2 x 1.5V AAA batteries, detachable carry strap and instructions

ENVIRONMENTAL

Operating environment: -20°C to 60°C at <70% R.H.
Storage environment: -20°C to 60°C <80% R.H. with batteries removed

EMC

Conforms to BS EN61326-1

Check out what else you can get from Martindale:

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- Phase Rotation Testers
- Proving Units
- Socket Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators
- Specialist Metrohm Testers (4 & 5kV)
- Specialist Drummond Testers

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